HIGH RESOLUTION. APOGEE QUALITY.

POWERFUL, EASY USER INTERFACE

The Trak2's user interface is an entirely new departure for Apogee. A central feature of the front panel is the large, clearly-readable backlit LCD. To its left are four cursor-control keys used to navigate around the display, and to the right of the display there is a substantial delta-wheel that enables values to be selected, or parameters entered with a simple push.

*The **Active Status Display** (see front-panel picture overleaf) shows the current configuration of the main signal path through the unit: individual aspects of the chain can be selected and modified. The **System Setup Screen** shown here allows rapid access to the primary features of the unit. Other screens determine the gain structure, HPF settings, Soft Saturate and Soft Limit configuration, UV22HR, headroom, calibration, the word-length of the signal path through the unit, and a host of other functions. When you've configured the Trak2 for a particular application, you can store the unit's entire settings in any one of 64 user presets for instant recall.*

The Trak2 front panel interface is rounded out by two high-resolution LED bar meters of the same design as those on the acclaimed AD-8000 – with several different modes including simultaneous peak and average, peak hold and over indication. Overs can be logged on the LCD display. In addition to the meters, LEDs indicate polarity inversion, phantom power, insert and aux input status, plus mic preamp clipping independently of the main digital over indicators.

In addition, the Trak2 delivers a new, more powerful version of Apogee's unique Soft Saturate system, introduced on the original AD-500, which simulates analog tape compression. Both features can be switched in and out on a per-channel basis.

MAXIMUM INTERFACE VERSATILITY

The built-in digital output, software-switchable to deliver AES/EBU or S/PDIF signals, is only the beginning of the unit's prodigious interfacing capabilities.

Key to the Trak2's interface capability is the inclusion of two Apogee Multimedia Bus (AMBus) slots. These enable the Trak2 to connect to a wide variety of industry standard interfaces including Digidesign's Pro Tools, ADAT, TDIF, SDIF-II, SSL HiWay, and others, with new cards being added all the time. Many cards (such as those designed for use with modular digital multitracks) support Apogee Bit-Splitting, which enables you to use standard 44.1/48, 16-bit recorders to store 20- or 24-bit audio, and even 96 kHz signals.

The Trak2 features the latest version of the Apogee Ultra-Low Jitter Clock, which is used to lock the unit to incoming digital (and optionally video) signals. A sophisticated phase-locked loop locks firmly and accurately to the sync source while at the same time significantly reducing jitter components in the signal, improving signal clarity and stereo image width and stability.

Included in the Trak2 is the latest incarnation of Apogee's industry-standard UV22 system for digital word-length reduction, called UV22HR (High Resolution). Used on an estimated 80% of CDs mastered in the United States, UV22 takes a high-resolution digital signal and reduces the word-length to 16 or 20 bits for CD or DVD-V mastering without significant loss of detail, and without increasing the noise floor above the theoretical level for the word length – unlike noise-shaping and similar techniques. And unlike inferior DSP approaches, UV22HR's unique, highly-optimized technology does not require different settings for different types of program: one size really does fit all.

ADD A D/A

The Trak2 includes a special slot for an optional 2-channel or 8-channel D/A card with specifications matching those of the A/D section, turning the Trak2 into a complete digital audio conversion system with two A/D channels and up to 8 D/A.

The AMBus cards also provide a way of converting between different digital signal formats. Any signal brought into the Trak2, analog or digital, is available from all interfaces, including the D/A. Source and Destination Monitoring, plus a powerful eight-channel digital routing matrix, can be used to set up multiple paths through the unit – for example, bringing two channels of analog into Pro Tools and eight digital channels from Pro Tools back to the D/A for monitoring, while simultaneously feeding a DA-78.

HEAR THE APOGEE DIFFERENCE

You've never encountered anything like the Trak2 from Apogee Digital. With the sweetest-sounding mic preamp you've ever heard, superb 24-bit, 96kHz A/D and optional D/A conversion, interfacing with almost any digital system including a direct connection to Pro Tools… the possibilities are endless.

Try the Trak2 at your authorized dealer today… and hear *The Apogee Difference.*

TRAK2 SPECIFICATIONS

MICROPHONE PREAMPLIFIER

Parameter	*Value*	*Units*
Gain (adjustable by software)	–90 to +90	dB
Max input level, mic input	+24	dBu
Max output level, analog out	+28	dBu
Minimum load impedance	150	Ω
Relative THD+Noise	–109	dB (at 1 kHz)
Dynamic range	118	dB (A weighted)
Bandwidth	10 Hz – 300 kHz	±1 dB
HPF rolloff at 40 or 90 Hz	18	dB/octave

A/D CONVERTER

Parameter	*Value*	*Units*
Resolution	24	bits
Sample Rates	44.1–96 kHz	±10%
Relative THD+Noise, –0.1 dBFS	–112	dB (A-weighted)
Dynamic range, –60 dB	–119	dB (A-weighted)
Peak spurious component	–126	dB (max)
Group delay in passband	34/Fs	seconds
Passband ripple	±0.001	dB
Digital filter stopband	0.5542Fs	kHz
Stopband attenuation	117	dB
Interchannel crosstalk	≤ –120	dB (at 1 kHz)
Frequency Response, 10 Hz–20 kHz		
Gain	±0.025	dB
Phase	< 0.01	degrees
Maximum input levels		
Consumer mode	+6	dBV
Professional mode	+28	dBu
Input impedance at line inputs		
Consumer	15	kΩ
Professional	9	kΩ
Sensitivity adjusted by software.		
Common-mode rejection ratio		
60 Hz	>>100	dB
1 kHz	>> 80	dB
Clock jitter, 32–106 kHz	<<15	pSec
Crystal Oscillator accuracy	±50	ppm

D/A CONVERTER

Parameter	*Value*	*Units*
Resolution	24	bits
Conversion system	Delta-Sigma	
Sample Rates	32–106	kHz
Relative THD+N, S/(N+D)		
–0.5 dBFS input	–104	dB (at 1 kHz)
Dynamic range, –60 dB	–116	dB (A-weighted)
Passband ripple	0.0002	dB
Stopband attenuation	115	dB
Interchannel crosstalk	≤ –125	dB
Frequency Response, 10 Hz–20 kHz		
Gain	±0.15	dB
Phase	<< 1.0	degrees
Output levels adjustable by software from consumer level (–10 dBV) to professional level (+28 dBu)		

DIGITAL SIGNAL PROCESSING

Parameter	*Value*	*Units*
UV22HR Amplitude		
16 bits	–84	dB
20 bits	–108	dB
Metering		
Accuracy (CAL mode)	± 0.1	dB
Over Detection	1–4 consecutive 0 dBFS readings	(user-definable)

SYSTEM

Parameter	*Value*	*Units*
AC line voltage	100, 120, 220, 240 v ac (set internally)	
Fusing	5 x 20 mm, 1.6A (100–110v); 800 mA (220–240 v) slow-blow	
Power (fully loaded)	50	Watts
Size (w, h, d)	19 in, 1.75 in (1U), 14.25 in	
Weight	12.5 lb (5.8 kg)	

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HEAR THE APOGEE DIFFERENCE.

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THE APOGEE TRAK2

Mic preamp and 24/96 conversion system.

TRAK2

Hear the Apogee difference.

APOGEE ELECTRONICS
www.apogeedigital.com

Great Preamp. Brilliant Converter.

Everything you need — in one place.

IMAGINE that you could own the highest-quality 2-channel mic preamplifier on the market. With ±90 dB gain, front panel inputs, analog inserts/outputs, phantom power – the works.

Now imagine that mic preamplifier with a full 24-bit, 96 kHz, 117 dB dynamic range Apogee A/D converter behind it. With built-in AES and S/PDIF interfaces, plus the ability to plug in cards for almost any interface you can imagine including Pro Tools®, ADAT, TDIF and more.

Then wonder what it would be like to include optional video sync, optional 2- or 8-channel D/A cards with virtually the same incredible specs, eight-channel routing and format conversion, a serial/MIDI connection, a powerful software-controlled interface giving access to a host of advanced features, and firmware you can update over the Internet…

Now your imagination has become reality. With **Apogee's Trak2** – the ultimate analog/digital combination. With the Trak2, you can have it all, in one compact single-unit rack space: superb mic pre; incredible A/D; any interface you need; digital routing; and behind it, Apogee's legendary name and reputation for the very highest audio quality available in the industry today.

The Apogee Trak2 at a glance.

- **Superb 2-channel microphone preamplifier with phantom power, ±90 dB gain, front-panel universal input socket, high-Z direct instrument input, analog out… and an incredible sound.**
- **Two channels of Apogee's true 24-bit, 96 kHz A/D conversion with 117 dB dynamic range.**
- **Full eight channel digital routing, format conversion and monitoring architecture.**
- **AES/EBU and S/PDIF out plus two AMBus card slots to interface with Pro Tools, ADAT, TDIF, SDIF-II, SSL HiWay, etc.**
- **Apogee *Soft Limit*® helps you record at a higher level without overs; *Soft Saturate*™ gives you the sound of analog tape compression!**
- **Apogee's enhanced high-resolution *UV22HR*™ translates 24-bit signals to 20 or 16 bits with minimal quality loss.**
- **Apogee's latest ultra-low-jitter master clock.**
- **Optional video sync capability.**
- **Clear LCD display shows current configuration and signal flow.**
- **Cursor control and delta-wheel make settings changes quick and easy, and allow access to powerful advanced functions.**
- **Programmable Quick Keys for instant access to up to four frequently-used functions.**
- **Large 2-channel LED bar meter reads level or phase.**
- **User-definable over detection (1-4 digital full scale).**

A superb mic preamp…

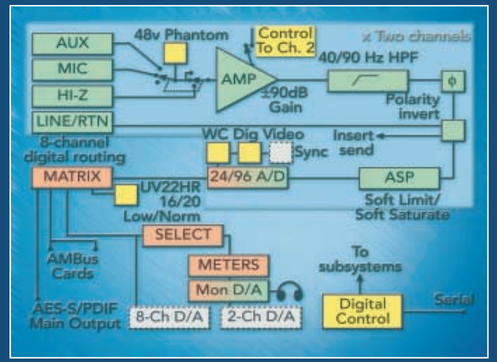
At the front of the Trak2 is a mic preamp with the highest performance you'll find in the marketplace, ±90 dB gain, 20 dB pad, HPF and phantom power.

Accessible via rear panel XLRs or front-panel universal connectors, the sound of this preamp will have you wanting to use it on every session, analog or digital. The front panel inputs also accept instrument inputs, for maximum versatility.

An insert point is included for analog output, or to allow the insertion of analog processors into the Trak2 signal path. Advanced features such as a gain-riding mode permit outstanding flexibility.

…An incredible A/D

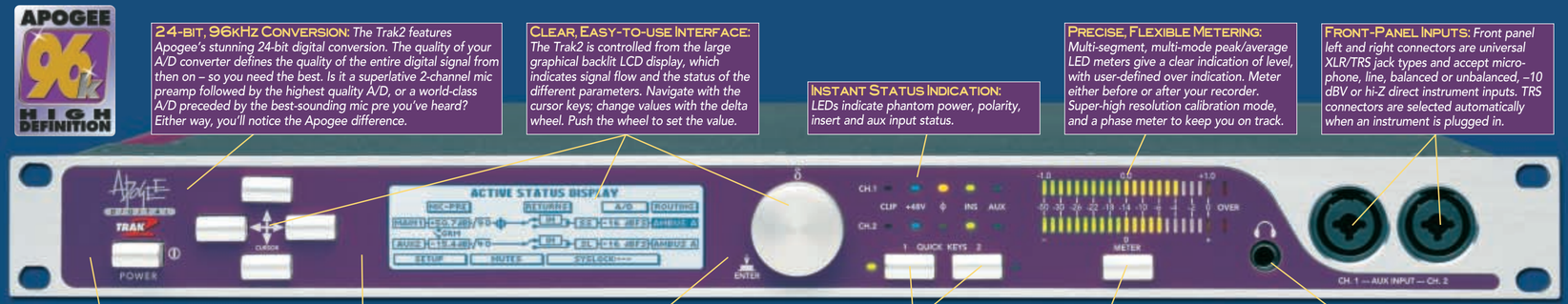
From the analog stage, the signal passes to the very latest in A/D conversion technology from Apogee's award-winning engineering design team. The 2-channel, 24-bit A/D operates at 44.1, 48, 88.2 and 96 kHz with a dynamic range in excess of 117 dB and an overall level of quality exceeding that of systems costing several times the price. The A/D also includes Apogee's renowned **Soft Limit** system, which maximizes recording level without overs.



Inside the Trak2

The Trak 2 includes a high-quality 2-channel preamp, offering line and mic level inputs (with switchable 48v phantom power) plus aux and instrument-level inputs on the front panel. The following gain stage offers ±90 dB, plus a 20 dB pad, and includes several control options including linking the two channels together. After this comes a switchable 40/90 Hz high-pass filter and phase (polarity) inversion switch. The signal is available for external processing or output via an insert point. An analog signal processor applies Soft Limit or Soft Saturate to the signal before it passes to the 24-bit 44.1–96 kHz sampling A/D converter, which can be clocked via internal or external sources. An eight-channel routing matrix allows pairs of inputs to be routed to pairs of outputs, including the on-board AES-S/PDIF outputs and two AMBus card slots. UV22HR can also be applied at this point. Optional 2- or 8-channel D/A cards complete the picture.

Apogee Quality. A difference you can hear immediately.



24-bit, 96kHz Conversion: *The Trak2 features Apogee's stunning 24-bit digital conversion. The quality of your A/D converter defines the quality of the entire digital signal from then on – so you need the best. Is it a superlative 2-channel mic preamp followed by the highest quality A/D, or a world-class A/D preceded by the best-sounding mic pre you've heard? Either way, you'll notice the Apogee difference.*

Clear, Easy-to-use Interface: *The Trak2 is controlled from the large graphical backlit LCD display, which indicates signal flow and the status of the different parameters. Navigate with the cursor keys; change values with the delta wheel. Push the wheel to set the value.*

Instant Status Indication: *LEDs indicate phantom power, polarity, insert and aux input status.*

Precise, Flexible Metering: *Multi-segment, multi-mode peak/average LED meters give a clear indication of level, with user-defined over indication. Meter either before or after your recorder. Super-high resolution calibration mode, and a phase meter to keep you on track.*

Front-Panel Inputs: *Front panel left and right connectors are universal XLR/TRS jack types and accept microphone, line, balanced or unbalanced, –10 dBV or hi-Z direct instrument inputs. TRS connectors are selected automatically when an instrument is plugged in.*

Soft Limit and Soft Saturate: *Apogee's proprietary technologies are selectable on a per-channel basis. Soft Limit allows maximum level without overs; Soft Saturate adds the warmth and punch of analog tape compression.*

UV22HR: *Apogee's UV22HR system preserves maximum detail when reducing the Trak2's 24-bit conversion to 16- or 20-bit for Compact Disc or DVD. Low (multi-pass) or Normal (mastering) settings for maximum flexibility.*

Video Sync: *With an optional video card the Trak2 can be set to lock to PAL, NTSC and B&W video, with sample rate pull-up and pull-down.*

Quick Keys: *Programmable keys provide instant front-panel access to any function in the Trak2. Each Quick Key can store two functions.*

Meter Button: *Selects the meter mode – peak, average, hold, etc – and clears the over indicators when required.*

Headphone Monitor: *Built-in stereo monitor D/A and headphone amplifier allow instant checking of selected signal pairs passing through the unit.*

Mic Preamp Inputs: *Balanced or unbalanced, the mic preamp offers up to ±90 dB of gain, adjustable from the front panel.*

Line-Level Inputs: *+4 dBu or –10 dBV, balanced or unbalanced, the line level inputs provide direct access to the A/D section.*

AMBus Interface Slots: *Two 8-channel AMBus slots are provided, supporting cards like those in the AD-8000. Interfaces include a direct Pro Tools connection, ADAT, TDIF, SDIF-II (DASH), SSL HiWay and others.*

Format Conversion: *All installed interfaces can be used simultaneously; any signal input to the Trak2 is output from all available interfaces. AMBus technology allows full 8-channel digital format conversion, for maximum versatility in the studio.*

Word Clock In & Out: *BNC connectors provide word clock to other devices, and synchronization to word clock in. The input is also used for optional video sync.*

Linear Power Supply: *The super-smooth linear power supply is built around a custom toroidal transformer, minimizing interference and avoiding potential spikes and noise. A generously-specified exposed heat sink is included.*

Insert Points: *Inserts allow you to patch analog processing gear between the mic pre and the A/D converter, or to derive an analog output from the mic preamp alone for processing elsewhere.*

D/A Converter Option Slot: *Plug in a 2- or 8-channel D/A converter card to build a complete conversion system. Cards offer the same 24-bit capability and superb performance as the A/D.*

Direct Pro Tools Interface: *With the Digi-8+ AMBus card, the Trak2 becomes a unique Pro Tools interface, communicating direct with the computer for super-quality performance.*

AES/EBU & S/PDIF Output: *This socket delivers industry standard digital signals, irrespective of the presence of AMBus cards, enabling the Trak2 to be used straight out of the box.*

Communications Port: *High-density connector provides a serial connection for transferring firmware updates from the Internet, planned MIDI remote control capability, and more. Cable included.*

Apogee Bit-Splitting: *Some AMBus interface cards allow for Apogee Bit-Splitting to be used to record and play back 24-bit and 24/96 signals on regular 44.1/48 kHz 16-bit recorders.*

The Trak2 — A superlative mic preamp and 2-channel, 96 kHz A/D Converter.